09/879,859

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* * * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

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*** YOU HAVE NEW MAIL ***

=> s synthe?(4a) oligo?
L1       99200 SYNTHE?(4A) OLIGO?

=> s l1and beta cyanoethyl?
L2           0 L1AND BETA CYANOETHYL?

=> s l1 and beta cyanoethyl?
L3        2232 L1 AND BETA CYANOETHYL?

=> s l3 and (remov? or deprotect?) (3a) beta cyanoethyl?
L4           65 L3 AND (REMOV? OR DEPROTECT?) (3A) BETA CYANOETHYL?

=> s l4 and aqueous
L5           47 L4 AND AQUEOUS

=> s l5 and amine
L6           34 L5 AND AMINE

=> dup rem l6
PROCESSING COMPLETED FOR L6
L7           34 DUP REM L6 (0 DUPLICATES REMOVED)

=> s l7 and phosphorothioate?
L8           24 L7 AND PHOSPHOROTHIOATE?

=> s l8and phosphodiester?
L9           0 L8AND PHOSPHODIESTER?

=> s l8 and phosphodiester?
L10          21 L8 AND PHOSPHODIESTER?

=> d l10 bib abs 1-21

L10  ANSWER 1 OF 21  USPATFULL on STN
AN     2004:280277  USPATFULL
```

TI Process for the **synthesis** of **oligomeric** compounds
IN Ravikumar, Vasulinga T., Carlsbad, CA, UNITED STATES
Manoharan, Muthiah, Carlsbad, CA, UNITED STATES
Capaldi, Daniel C., San Diego, CA, UNITED STATES
Krotz, Achim, San Diego, CA, UNITED STATES
Cole, Douglas L., San Diego, CA, UNITED STATES
Guzaev, Andrei, Carlsbad, CA, UNITED STATES
PI US 2004219577 A1 20041104
AI US 2004-760940 A1 20040120 (10)
RLI Continuation of Ser. No. US 2002-232881, filed on 30 Aug 2002, PENDING
Continuation of Ser. No. US 1999-288679, filed on 9 Apr 1999, GRANTED, Pat. No. US 6465628
PRAI US 1999-118564P 19990204 (60)
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, ONE LIBERTY PLACE - 46TH FLOOR, PHILADELPHIA, PA, 19103
CLMN Number of Claims: 12
ECL Exemplary Claim: CLM-1-112
DRWN No Drawings
LN.CNT 1656
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB **Synthetic** processes are provided wherein **oligomeric** compounds are prepared having **phosphodiester**, **phosphorothioate**, phosphorodithioate, or other covalent linkages. The oligomers have substantially reduced exocyclic adducts deriving from acrylonitrile or related contaminants.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 2 OF 21 USPATFULL on STN
AN 2003:325236 USPATFULL
TI Synthons for **oligonucleotide synthesis**
IN Sinha, Nanda D., Boxboro, MA, UNITED STATES
PA Avecia Biotechnology Inc., Milford, MA (U.S. corporation)
PI US 2003229218 A1 20031211
AI US 2003-385193 A1 20030307 (10)
RLI Continuation of Ser. No. WO 2001-GB3973, filed on 6 Sep 2001, UNKNOWN
DT Utility
FS APPLICATION
LREP HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133
CLMN Number of Claims: 55
ECL Exemplary Claim: 1
DRWN 9 Drawing Page(s)
LN.CNT 1531
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to phosphoramidite compounds, especially to a trivalent phosphorus multimer, a method of utilizing a trivalent phosphorus multimer to prepare an oligonucleotide, and a method of preparing a trivalent phosphorus multimer. In addition, the invention relates to a solid support that is derivatized with a trivalent phosphorus multimer and a method of preparing the same.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 3 OF 21 USPATFULL on STN
AN 2003:276716 USPATFULL
TI COMBINATORIAL PROTECTING GROUP STRATEGY FOR MULTIFUNCTIONAL MOLECULES
IN KOSTER, HUBERT, HAMBURG, GERMANY, FEDERAL REPUBLIC OF
LEIKAUF, ECKART, HAMBURG, GERMANY, FEDERAL REPUBLIC OF
PI US 2003194741 A1 20031016

PI US 6828435 B2 20041207
AI US 1999-171625 A1 19990702 (9)
WO 1997-US6509 19970417
DT Utility
FS APPLICATION
LREP HELLER EHRMAN WHITE & MCAULIFFE LLP, 4350 LA JOLLA VILLAGE DRIVE, 7TH FLOOR, SAN DIEGO, CA, 92122-1246
CLMN Number of Claims: 36
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 1478
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB In general, the invention features the use of novel protection schemes and solid phase synthesis reactions to generate molecules of core structure M, which have a plurality of functionalities, each of which can be individually protected or functionalized. In a preferred process, M is a multifunctional low molecular weight compound, such as a saccharide, aminosugar, deoxysugar, nucleoside, nucleotide, coenzyme, amino acid, lipid, steroid, vitamin, hormone, alkaloid, or small molecule drug. In a particularly preferred process, M is an oligomeric compound (e.g. a polysaccharide, polynucleotide, peptide or protein).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 4 OF 21 USPATFULL on STN
AN 2003:250916 USPATFULL
TI Sorting and immobilization system for nucleic acids using synthetic binding systems
IN Schweitzer, Markus, Frankfurt am Main, DE, UNITED STATES
Anderson, Richard R., Encinitas, CA, UNITED STATES
Fiechtner, Michael, Poway, CA, UNITED STATES
Muller, Jochen, Diez, GERMANY, FEDERAL REPUBLIC OF
Raddatz, Stefan, Wiesbaden, GERMANY, FEDERAL REPUBLIC OF
Brucher, Christoph, Sulzbach, GERMANY, FEDERAL REPUBLIC OF
Windhab, Norbert, Hofheim am Taunus, GERMANY, FEDERAL REPUBLIC OF
Orwick, Jill, Kelkheim, GERMANY, FEDERAL REPUBLIC OF
Schneider, Eberhard, Kelkheim, GERMANY, FEDERAL REPUBLIC OF
Pignot, Marc, Bad Soden/Ts., GERMANY, FEDERAL REPUBLIC OF
Kienle, Stefan, Frankfurt, GERMANY, FEDERAL REPUBLIC OF
PI US 2003175702 A1 20030918
AI US 2001-910469 A1 20010719 (9)
DT Utility
FS APPLICATION
LREP O'MELVENY & MEYERS, 114 PACIFICA, SUITE 100, IRVINE, CA, 92618
CLMN Number of Claims: 326
ECL Exemplary Claim: 1
DRWN 33 Drawing Page(s)
LN.CNT 5573
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to conjugates of synthetic binding units and nucleic acids. The present invention also relates to methods for sorting and immobilizing nucleic acids on support materials using such conjugates by specific molecular addressing of the nucleic acids mediated by the synthetic binding systems. Particularly, the present invention also relates to novel methods of utilizing conjugates of synthetic binding units and nucleic acids to in active electronic array systems to produce novel array constructs from the conjugates, and the use of such constructs in various nucleic acid assay formats. In addition, the present invention relates to various novel forms of such conjugates, improved methods of making solid phase synthesized conjugates, and improved methods of conjugating pre-synthesized synthetic binding units and nucleic acids. The present invention also

relates to the use of conjugates of synthetic binding units and nucleic acids as substrates for various enzymatic reactions, including nucleic acid amplification reactions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 5 OF 21 USPATFULL on STN
AN 2003:225726 USPATFULL
TI Nucleic acid biosensor diagnostics
IN Krull, Ulrich J., Mississauga, CANADA
Piunno, Paul A., Mississauga, CANADA
Hudson, Robert H.E., London, CANADA
Damha, Masad, St. Hubert, CANADA
Uddin, Andre H., Georgetown, CANADA
PI US 2003157538 A1 20030821
AI US 2003-338787 A1 20030107 (10)
RLI Continuation of Ser. No. US 2000-446222, filed on 16 Feb 2000, GRANTED, Pat. No. US 6503711 A 371 of International Ser. No. WO 1998-CA402, filed on 30 Apr 1998, UNKNOWN
PRAI CA 1997-2208165 19970618
US 1997-50970P 19970619 (60)
DT Utility
FS APPLICATION
LREP GREENLEE WINNER AND SULLIVAN P C, 5370 MANHATTAN CIRCLE, SUITE 201, BOULDER, CO, 80303
CLMN Number of Claims: 30
ECL Exemplary Claim: 1
DRWN 44 Drawing Page(s)
LN.CNT 3259
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A biosensor for direct analysis of nucleic acid hybridization by use of an optical fiber functionalized with nucleic acid molecules and fluorescence transduction is disclosed. Nucleic acid probes are immobilized onto the surface of optical fibers and undergo hybridization with complementary nucleic acids introduced into the local environment of the sensor. Hybridization events are detected by the use of fluorescent compounds which bind into nucleic acid hybrids. The invention finds uses in detection and screening of genetic disorders, viruses, and pathogenic microorganisms. Biotechnology applications include monitoring of gene cultures and gene expression and the effectiveness (e.g. dose-response) of gene therapy pharmaceuticals. The invention includes biosensor systems in which fluorescent molecules are connected to the immobilized nucleic acid molecules. The preferred method for immobilization of nucleic acids is by in-situ solid phase nucleic acid synthesis. Control of the refractive index of the immobilized nucleic acid is achieved by the support derivatization chemistry and the nucleic acid synthesis. The preferred optical fiber derivation yields a DNA coating of higher refractive index than the fiber core onto the fiber surface.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 6 OF 21 USPATFULL on STN
AN 2003:127873 USPATFULL
TI Process for the **synthesis** of **oligomeric** compounds
IN Ravikumar, Vasulinga T., Carlsbad, CA, UNITED STATES
Manoharan, Muthiah, Carlsbad, CA, UNITED STATES
Capaldi, Daniel C., San Diego, CA, UNITED STATES
Krotz, Achim, San Diego, CA, UNITED STATES
Cole, Douglas L., San Diego, CA, UNITED STATES
Guzaev, Andrei, Carlsbad, CA, UNITED STATES
PI US 2003088088 A1 20030508

AI US 2002-232881 A1 20020830 (10)
RLI Continuation of Ser. No. US 1999-288679, filed on 9 Apr 1999, GRANTED, Pat. No. US 6465628
PRAI US 1999-118564P 19990204 (60)
DT Utility
FS APPLICATION
LREP WOODCOCK WASHBURN LLP, ONE LIBERTY PLACE, 46TH FLOOR, 1650 MARKET STREET, PHILADELPHIA, PA, 19103
CLMN Number of Claims: 112
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1992
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB **Synthetic** processes are provided wherein **oligomeric** compounds are prepared having **phosphodiester, phosphorothioate**, phosphorodithioate, or other covalent linkages. The oligomers have substantially reduced exocyclic adducts deriving from acrylonitrile or related contaminants.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 7 OF 21 USPATFULL on STN
AN 2003:123405 USPATFULL
TI Process for preparing peptide derivatized oligomeric compounds
IN Manoharan, Muthiah, Carlsbad, CA, United States
Guzaev, Andrei P., Carlsbad, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6559279 B1 20030506
AI US 2000-658517 20000908 (9)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Russel, Jeffrey E.
LREP Woodcock Washburn LLP
CLMN Number of Claims: 28
ECL Exemplary Claim: 1
DRWN 3 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 2512
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods of preparing peptide linked oligomeric compounds are provided. The method is useful for preparing larger scale amounts of peptide linked **oligomeric** compounds. More particularly, the **synthesis** of peptide linked **oligomeric** compounds is performed without the problems of aggregation associated with electrostatic interactions. The present method describes using equimolar amounts of oligomeric compounds and peptide reagents providing for an increase in overall efficiency.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 8 OF 21 USPATFULL on STN
AN 2003:78490 USPATFULL
TI Combinatorial protecting group strategy for multifunctional molecules
IN Koster, Hubert, Hamburg, GERMANY, FEDERAL REPUBLIC OF
Leikauf, Eckart, Hamburg, GERMANY, FEDERAL REPUBLIC OF
PI US 2003054410 A1 20030320
AI US 2002-211073 A1 20020731 (10)
RLI Continuation of Ser. No. US 1999-171625, filed on 2 Jul 1999, PENDING A 371 of International Ser. No. WO 1997-US6509, filed on 17 Apr 1997, PENDING
PRAI US 1996-15699P 19960417 (60)
DT Utility

FS APPLICATION
LREP ELLER EHRMAN WHITE & MCAULIFFE LLP, 4350 LA JOLLA VILLAGE DRIVE, 7TH FLOOR, SAN DIEGO, CA, 92122-1246
CLMN Number of Claims: 36
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 1538
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB In general, the invention features the use of novel protection schemes and solid phase synthesis reactions to generate molecules of core structure M, which have a plurality of moieties, each of which can be individually deprotected or subsequently derivatized. In a preferred process, M is a multifunctional low molecular weight compound, such as a saccharide, aminosugar, deoxysugar, nucleoside, nucleotide, coenzyme, amino acid, lipid, steroid, vitamin, hormone, alkaloid, or small molecule drug. In a particularly preferred process, M is an oligomeric compound (e.g. a oligosaccharide, oligonucleotide, peptide or protein).

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 9 OF 21 USPATFULL on STN
AN 2003:40537 USPATFULL
TI Combinatorial antisense library
IN Riley, Timothy A., San Diego, CA, United States
Brown, Bob D., San Diego, CA, United States
Arnold, Lyle J., San Diego, CA, United States
PA Oasis Biosciences Incorporated, San Diego, CA, United States (U.S. corporation)
PI US 6518017 B1 20030211
AI US 1998-136080 19980818 (9)
PRAI US 1997-60673P 19971002 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: LeGuyader, John L.; Assistant Examiner: Schmidt, Mary M
LREP Knobbe, Martens, Olson & Bear, LLP
CLMN Number of Claims: 7
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1745
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Combinatorial libraries comprise first oligonucleotide analogs and second oligonucleotide analogs which are coupled together to form antisense molecules capable of binding target polynucleotides and activating an RNase, and ribozymes capable of cleaving polynucleotides.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 10 OF 21 USPATFULL on STN
AN 2003:6795 USPATFULL
TI Nucleic acid biosensor diagnostics
IN Krull, Ulrich J., 1920 Sandown Rd., Mississauga Ontario, CANADA L5M 2Z8
Piunno, Paul A., 963 Lovingston Crescent, Mississauga Ontario, CANADA L4W 3V7
Hudson, Robert H. E., 389 Dundas St., Apartment 507, London Ontario, CANADA N6B 3L5
Damha, Masad, 3166 Pierre - Thomas Hurteau, St. Hubert Quebec, CANADA J3Y 8N9
Uddin, Andre H., 3665 Adams Way, Suite 1608, Mississauga Ontario, CANADA L5A 4A3
PI US 6503711 B1 20030107
WO 9858079 19981223

AI US 2000-446222 20000216 (9)
WO 1998-CA402 19980430
PRAI CA 1997-2208165 19970618
US 1997-50970P 19970619 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Fredman, Jeffrey
LREP Greenlee, Winner and Sullivan, P.C.
CLMN Number of Claims: 61
ECL Exemplary Claim: 1
DRWN 50 Drawing Figure(s); 44 Drawing Page(s)
LN.CNT 3538
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A biosensor for direct analysis of nucleic acid hybridazation by use of an optical fiber functionalized with nucleic acid molecules and fluorescence transduction is disclosed. Nucleic acid probes are immobilized onto the surface of optical fibers and undergo hybridization with complementary nucleic acids introduced into the local environment of the sensor. Hybridization events are detected by the use of fluorescent compounds which bind into nucleic acid hybrids. The invention finds uses in detection and screening of genetic disorders, viruses, and pathogenic micoorganisms. Biotechnology applications include monitoring of gene cultures and gene expression and the effectiveness (e.g. dose-response) of gene therapy pharmaceuticals. The invention includes biosensor systems in which fluorescent molecules are connected to the immobilized nucleic acid molecules. The preferred method for immobilization of nucleic acids is by in situ solid phase nucleic acid synthesis. Control of the refractive index of the immobilized nucleic acid is achieved by the support derivatization chemistry and the nucleic acid synthesis. The preferred optical fiber derivation yields a DNA coating of higher refractive index than the fiber core onto the fiber surface.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 11 OF 21 USPATFULL on STN
AN 2002:283368 USPATFULL
TI Purification of oligomers using dual-end selection
IN Horn, Thomas, Berkeley, CA, United States
Urdea, Michael S., Alamo, CA, United States
PA Bayer Corporation, Walpole, MA, United States (U.S. corporation)
PI US 6472522 B1 20021029
AI US 1999-384852 19990827 (9)
PRAI US 1998-98357P 19980827 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Wilson, James O.
LREP Reed, Dianne E., Hartrum, J. Elin
CLMN Number of Claims: 16
ECL Exemplary Claim: 1
DRWN 2 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 1768
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Oligomers are prepared substantially free of error sequences by sequentially adding monomers to a growing chain bound to a support through a first selectably cleavable linkage, a first capture moiety and a second selectably cleavable linkage. At the completion of monomer addition, the completed oligomer is cleaved from the support to reveal the first capture moiety and purified by virtue of the presence of a second capture moiety, e.g., a terminal blocking group, and the first capture moiety. A support-bound oligomer having the structural formula (I)

S--[X1].sub.n1--SC1--CP2--[X2].sub.n2--SC3--T.sup.1--X--T.sup.2--SC2--CP1 (I)

is also provided wherein T.sup.1, T.sup.2, X1, X2, n1, n2, SC1, SC2, SC3, CP1 and CP2 are as defined herein.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 12 OF 21 USPATFULL on STN
AN 2002:280785 USPATFULL
TI Process for preparing peptide derivatized oligomeric compounds
IN Manoharan, Muthiah, Carlsbad, CA, UNITED STATES
Guzaev, Andrei P., Carlsbad, CA, UNITED STATES
PI US 2002156235 A1 20021024
US 6762281 B2 20040713
AI US 2001-949474 A1 20010907 (9)
RLI Continuation-in-part of Ser. No. US 2000-658517, filed on 8 Sep 2000, PENDING
DT Utility
FS APPLICATION
LREP Michael P. Straher, WOODCOCK WASHBURN LLP, 46th Floor, One Liberty Place, Philadelphia, PA, 19103
CLMN Number of Claims: 31
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 3069
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Methods of preparing peptide linked oligomeric compounds are provided. The method is useful for preparing larger scale amounts of peptide linked **oligomeric** compounds. More particularly, the **synthesis** of peptide linked **oligomeric** compounds is performed without the problems of aggregation associated with electrostatic interactions. The present method describes using equimolar amounts of oligomeric compounds and peptide reagents providing for an increase in overall efficiency.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 13 OF 21 USPATFULL on STN
AN 2002:268874 USPATFULL
TI Process for the **synthesis** of **oligomeric** compounds
IN Ravikumar, Vasulinga T., Carlsbad, CA, United States
Manoharan, Muthiah, Carlsbad, CA, United States
Capaldi, Daniel C., San Diego, CA, United States
Krotz, Achim, San Diego, CA, United States
Cole, Douglas L., San Diego, CA, United States
Guzaev, Andrei, Carlsbad, CA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 6465628 B1 20021015
AI US 1999-288679 19990409 (9)
PRAI US 1999-118564P 19990204 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Richter, Johann; Assistant Examiner: Crane, L. Eric
LREP Woodcock Washburn LLP
CLMN Number of Claims: 62
ECL Exemplary Claim: 1
DRWN 0 Drawing Figure(s); 0 Drawing Page(s)
LN.CNT 2041
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB **Synthetic** processes are provided wherein **oligomeric** compounds are prepared having **phosphodiester, phosphorothioate,** phosphorodithioate, or other covalent linkages. The oligomers have substantially reduced exocyclic adducts deriving from acrylonitrile or related contaminants.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 14 OF 21 USPATFULL on STN
AN 2002:141606 USPATFULL
TI Method of preventing modification of **synthetic oligonucleotides**
IN Sinha, Nanda D., Boxboro, MA, UNITED STATES
PA Avecia Biotechnology Inc., Milford, MA (U.S. corporation)
PI US 2002072593 A1 20020613
AI US 2001-879859 A1 20010612 (9)
PRAI US 2000-210757P 20000612 (60)
DT Utility
FS APPLICATION
LREP HAMILTON, BROOK, SMITH & REYNOLDS, P.C., 530 VIRGINIA ROAD, P.O. BOX 9133, CONCORD, MA, 01742-9133
CLMN Number of Claims: 97
ECL Exemplary Claim: 1
DRWN 4 Drawing Page(s)
LN.CNT 1023
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to a method of preventing modification of a **synthetic oligonucleotide** or **oligonucleotide** analog during removal of at least one . **beta.-cyanoethyl** protecting group from the oligonucleotide or oligonucleotide analog. The method involves contacting the oligonucleotide or oligonucleotide analog with a basic solution having at least one acrylonitrile scavenger, such as t-butylamine, at a sufficient temperature and for a sufficient period of time to **remove** at least one **.beta.-cyanoethyl** protecting group. The present invention also relates to a method of producing a **synthetic oligonucleotide** or **oligonucleotide** analog.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 15 OF 21 USPATFULL on STN
AN 1999:56551 USPATFULL
TI Methoxyoxalamido and succinimido precursors for nucleophilic addition to nucleosides, nucleotides and oligonucleotides
IN Polouchine, Nikolai N., Rockville, MD, United States
PA Fidelity Systems, Inc., Gaithersburg, MD, United States (U.S. corporation)
PI US 5902879 19990511
AI US 1996-692284 19960805 (8)
DT Utility
FS Granted
EXNAM Primary Examiner: Wilson, James O.
LREP Oliff & Berridge, PLC
CLMN Number of Claims: 19
ECL Exemplary Claim: 1,3
DRWN 2 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 821
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Moieties, including a 2'-methoxyoxalamido and N-succinimido moieties, were incorporated into a compound, particularly an oligonucleotide molecule. The moieties were shown to be useful precursors for the post

synthetic introduction of various functional additives.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 16 OF 21 USPATFULL on STN
AN 1998:51741 USPATFULL
TI Polynucleotide phosphorodithioate compounds
IN Caruthers, Marvin H., Boulder, CO, United States
Brill, Wolfgang K.-D, Schopfheim, Germany, Federal Republic of
Yau, Eric, Mercer Island, WA, United States
Ma, Michael, New York, NY, United States
Nielsen, John, Horsholm, Denmark
PA Competitve Technologies, Inc., Fairfield, CT, United States (U.S. corporation)
PI US 5750666 19980512
AI US 1994-332829 19941031 (8)
RLI Continuation-in-part of Ser. No. US 1993-12532, filed on 2 Feb 1993, now abandoned which is a division of Ser. No. US 1991-643381, filed on 22 Jan 1991, now patented, Pat. No. US 5218103 which is a continuation-in-part of Ser. No. US 1990-488805, filed on 5 Mar 1990, now abandoned which is a continuation of Ser. No. US 1989-367645, filed on 19 Jun 1989, now abandoned which is a continuation of Ser. No. US 1988-198886, filed on 26 May 1988, now abandoned And a continuation of Ser. No. US 1989-417387, filed on 5 Oct 1989, now abandoned which is a continuation-in-part of Ser. No. US 1989-314011, filed on 22 Feb 1989, now abandoned which is a continuation-in-part of Ser. No. US 1988-198886, filed on 26 May 1988, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Rories, Charles C.P.
LREP Yahwak & Associates
CLMN Number of Claims: 8
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 5 Drawing Page(s)
LN.CNT 1832
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to new and useful nucleoside thiophosphoroamidites and polynucleotide phosphorodithioate compounds as well as the processes whereby these compounds may be used for synthesizing new mononucleotides and polynucleotides having **phosphorothioate** and phosphorodithioate internucleotide linkages.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 17 OF 21 USPATFULL on STN
AN 97:101899 USPATFULL
TI Nucleoside thiophosphoramidites
IN Caruthers, Marvin H., Boulder, CO, United States
Brill, Wolfgang K. D., Schopfheim, Germany, Federal Republic of
Yau, Eric, Mercer Island, WA, United States
Ma, Michael, New York, NY, United States
Nielsen, John, Horsholm, Denmark
PA Competitive Technologies, Inc., Fairfield, CT, United States (U.S. corporation)
PI US 5684148 19971104
AI US 1995-442705 19950517 (8)
RLI Division of Ser. No. US 1994-332829, filed on 31 Oct 1994 which is a continuation-in-part of Ser. No. US 1993-12532, filed on 2 Feb 1993, now abandoned which is a division of Ser. No. US 1991-643381, filed on 1 Jan 1991, now patented, Pat. No. US 5218103 which is a continuation-in-part of Ser. No. US 1990-488805, filed on 5 Mar 1990, now abandoned which is

a continuation of Ser. No. US 1989-367645, filed on 19 Jun 1989, now abandoned which is a continuation of Ser. No. US 1988-198886, filed on 26 May 1988, now abandoned , said Ser. No. US 1991-643381, filed on 1 Jan 1991 which is a continuation-in-part of Ser. No. US 1989-417387, filed on 5 Oct 1989, now abandoned which is a continuation-in-part of Ser. No. US 1989-314011, filed on 22 Feb 1989, now abandoned which is a continuation-in-part of Ser. No. US 1988-198886, filed on 26 May 1988, now abandoned

DT Utility
FS Granted
EXNAM Primary Examiner: Kunz, Gary L.
LREP Yahwak & Associates
CLMN Number of Claims: 29
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 5 Drawing Page(s)
LN.CNT 1936
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to new and useful nucleoside thiophosphoroamidites and polynucleotide phosphorodithioate compounds as well as the processes whereby these compounds may be used for synthesizing new mononucleotides and polynucleotides having **phosphorothioate** and phosphorodithioate internucleotide linkages.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 18 OF 21 USPATFULL on STN
AN 97:56813 USPATFULL
TI Process for preparing **phosphorothioate** oligonucleotides
IN Yau, Eric K., Kirkland, WA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 5644048 19970701
AI US 1992-993115 19921218 (7)
RLI Division of Ser. No. US 1992-818928, filed on 10 Jan 1992, now patented, Pat. No. US 5210264
DT Utility
FS Granted
EXNAM Primary Examiner: Kunz, Gary L.
LREP Woodcock Washburn Kurtz Mackiewicz & Norris LLP
CLMN Number of Claims: 31
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1114
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A process for preparing **phosphorothioate** oligonucleotides utilizes S-(alkaryl or aryl) **phosphorothioate** compounds as intermediates suitable for use in the solution phase. A dinucleotide is prepared from a nucleoside intermediate that has been phosphitylated with an S-(alkaryl or aryl) alkyl **phosphorothioate** diester salt. The alkyl ester group is removed and the resulting nucleotide diester is reacted with a further nucleoside having a free 5'-hydroxyl group. Nucleotide units are linked together to yield compounds of the structure: ##STR1## where X is H, a first blocking group, a nucleoside, a nucleotide or an oligonucleotide; Y is H, a second blocking group, a nucleoside, a nucleotide or an oligonucleotide; R is an alkaryl or aryl group; n is an integer greater than 0; and Bx is a heterocyclic base. Deblocking of the S-alkaryl or S-aryl moiety yields a **phosphorothioate** oligonucleotide.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 19 OF 21 USPATFULL on STN
AN 97:12580 USPATFULL
TI Polynucleotide phosphorodithioate compounds
IN Caruthers, Marvin H., Boulder, CO, United States
Brill, Wolfgang K.-D., Schopfheim, Germany, Federal Republic of
Yau, Eric, Mercer Island, WA, United States
Ma, Michael, New York, NY, United States
Nielsen, John, Horsholm, Denmark
PA Competitive Technologies, Inc., Westport, CT, United States (U.S. corporation)
PI US 5602244 19970211
AI US 1995-436714 19950508 (8)
RLI Division of Ser. No. US 1994-332829, filed on 31 Oct 1994 which is a continuation-in-part of Ser. No. US 1993-12532, filed on 2 Feb 1993, now abandoned which is a division of Ser. No. US 1991-643381, filed on 22 Jan 1991, now patented, Pat. No. US 5218103 which is a continuation-in-part of Ser. No. US 1990-488805, filed on 5 Mar 1990, now abandoned which is a continuation of Ser. No. US 1989-367645, filed on 19 Jun 1989, now abandoned which is a continuation of Ser. No. US 1988-198886, filed on 26 May 1988, now abandoned Ser. No. Ser. No. US 1989-417387, filed on 5 Oct 1989, now abandoned which is a continuation-in-part of Ser. No. US 1989-314011, filed on 22 Feb 1989, now abandoned which is a continuation-in-part of Ser. No. US 1988-198886, filed on 26 May 1988, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Kunz, Gary L.
LREP Yahwak & Associates
CLMN Number of Claims: 5
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 5 Drawing Page(s)
LN.CNT 1845
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Dinucleoside phosphorodithioate phosphoramidite precursors useful in the **synthesis** of **oligonucleotide** phosphorodithioate which can be used as antisense inhibitors of translation.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 20 OF 21 USPATFULL on STN
AN 93:46548 USPATFULL
TI Nucleoside thiophosphoramidites
IN Caruthers, Marvin H., Boulder, CO, United States
Ma, Yun-Xi, Mississauga, Canada
Yau, Eric K., Kirkland, WA, United States
Nielsen, John, Horsholm, Denmark
Brill, Wolfgang, Freiburg, Germany, Federal Republic of
PA University Patents, Inc., Westport, CT, United States (U.S. corporation)
PI US 5218103 19930608
AI US 1991-643381 19910122 (7)
RLI Continuation-in-part of Ser. No. US 1989-417387, filed on 5 Oct 1989, now abandoned which is a continuation-in-part of Ser. No. US 1989-314011, filed on 22 Feb 1989, now abandoned which is a continuation-in-part of Ser. No. US 1988-198886, filed on 26 May 1988, now abandoned
DT Utility
FS Granted
EXNAM Primary Examiner: Brown, Johnnie R.; Assistant Examiner: Kunz, Gary L.
LREP Yahwak & Associates
CLMN Number of Claims: 26
ECL Exemplary Claim: 1
DRWN No Drawings

LN.CNT 1445
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to new and useful nucleside thiophosphoramidite, polynucleotide dithioate phosphoramidite and polynucleotide phosphorothioamidate phosphoramidite compounds as well as the process whereby these compounds can be used for synthesizing new monoucleotides and polynucleotides having phosphorodithioate, phosphorothioamidate, phosphorothiotriesters and **phosphorothioate** internucleotide linkages.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L10 ANSWER 21 OF 21 USPATFULL on STN
AN 93:37897 USPATFULL
TI S-(2,4-dichlorobenzyl)-.**beta**.-**cyanoethyl** **phosphorothioate** diester
IN Yau, Eric K., Kirkland, WA, United States
PA ISIS Pharmaceuticals, Inc., Carlsbad, CA, United States (U.S. corporation)
PI US 5210264 19930511
AI US 1992-818928 19920110 (7)
DT Utility
FS Granted
EXNAM Primary Examiner: Brown Johnnie R.; Assistant Examiner: Kunz, Gary L.
LREP Woodcock Washburn Kurtz Mackiewicz & Norris
CLMN Number of Claims: 1
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 928
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The compound S-(2,4-dichlorobenzyl)-.**beta**.-**cyanoethyl** **phosphorothioate** diester is disclosed as useful in the **synthesis** of **phosphorothioate oligonucleotides** . In certain embodiments of the invention, this reagent is used to prepare 3'-S-(alkaryl) **phosphorothioates**. The .**beta** .-**cyanoethyl** blocking group can be removed and the resulting diester reacted with a nucleotide having a free 5'-hydroxyl group to yield compounds of the structure: ##STR1## where X is H, a first blocking group, a nucleoside, a nucleotide or an oligonucleotide; Y is H, a second blocking group, a nucleotide or an oligonucleotide; R is an alkaryl or aryl group; n is an integer greater than 0; and Bx is a heterocyclic base. Deblocking of the S-alkaryl or S-aryl moiety yields a **phosphorothioate** oligonucleotide.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

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